



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

646.3511

Job Sheet 200989



Part No: 646.3511

Job Qty: 22 pcs ^{DAS 21 9-89}

Part Name: Strut



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/20/19

Job Tracking No:

Due Date: 10/21/19

Created By: Jennifer Renwick

Type: Stock

Description:

Note: DWG REV N/C 3 IPP REV:A 12.10.19 NEW ISSUE DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
110	Waterjet - Flow - 1	20 pcs		10/21/19	0.17	0.81	Waterjet - Flow		ac 19/10/02
120	QC 2	20 pcs		10/21/19	0.00	0.00	QC 2 - 1		
							QC 2 - 12		
							QC 2 - 14		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		
							QC 2 - 33		
							QC 2 - 35		
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		ac 19/10/02
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 57		
							QC 2 - 62		



Dart Aerospace Ltd.
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CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S218965



Part: 646.3511

Job No: 200989

Serial No/Batch: S218965

Revision:

Inspector:

Exp Date:

Instructions: Various STC's

Date: 10/07/19

Plex 9/20/19 10:03 AM Dart.Renwick.Jennifer

130 QC 8	20 pcs	10/21/19	0.00	0.00	QC 2 - 63	
					QC 2 - 8	
					QC 2 - 66	
					QC 2 - 64	
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
					QC 8 - 12	
					QC 8 - 14	
					QC 8 - 17	
					QC 8 - 20	
					QC 8 - 25	
					QC 8 - 3	
					QC 8 - 32	
					QC 8 - 33	
					QC 8 - 35	
					QC 8 - 39	
140 Small Fab - 2 - B4B	20 pcs	10/21/19	0.00	8.40	QC 8 - 4	
					QC 8 - 44	
					QC 8 - 45	
					QC 8 - 49	
					QC 8 - 58	
					QC 8 - 8	
					QC 8 - 9	
					QC 8 - 68	
					QC 8 - 67	
					QC 8 - 1 (A)	OCT 02 2019
					QC 8 - 47	
					QC 8 - 40	
					QC 8 - 52	
					QC 8 - 23	
					QC 8 - 57	
					QC 8 - 76	
					QC 8 - 61	
					Small Fab - 1 - B4B	
					Small Fab - 2 - B4B	
150 QC 5	20 pcs	10/21/19	0.00	0.00	Small Fab - 3 - B4B	
					Small Fab - 4 - B4B	
					Small Fab - 5 - B4B	
					Small Fab - 6 - B4B	
					Small Fab - 7 - B4B	
					Small Fab - 8 - B4B	
					QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 43	
					QC 5 - 49	

					QC 5 - 51		
					QC 5 - 58		
					QC 5 - 68		
					QC 5 - 9		
					QC 5 - 50	EL	
					QC 5 - 30		
					QC 5 - 40		
					QC 5 - 61		
					QC 5 - 81		
160	Large Fab - Welded Assy-2-B4B	20 pcs	10/21/19	0.00	22.99	Large Fab - 1 - B4B	
						Large Fab - 10 - B4B	
						Large Fab - 2 - B4B	MV
						Large Fab - 3 - B4B	
						Large Fab - 4 - B4B	
						Large Fab - 5 - B4B	
						Large Fab - 6 - B4B	
						Large Fab - 7 - B4B	
						Large Fab - 8 - B4B	
						Large Fab - 9 - B4B	
						Large Fab - 11 - B4B (Various)	
170	QC 9	20 pcs	10/21/19	0.00	0.00	QC 9 - 10	
						QC 9 - 18	
						QC 9 - 24	
						QC 9 - 43	
						QC 9 - 50	EL
						QC 9 - 9	
180	QC 5	20 pcs	10/21/19	0.00	0.00	QC 5 - 10	
						QC 5 - 12	
						QC 5 - 17	
						QC 5 - 18	
						QC 5 - 19	
						QC 5 - 22	
						QC 5 - 24	
						QC 5 - 3	
						QC 5 - 43	
						QC 5 - 49	
						QC 5 - 51	
						QC 5 - 58	
						QC 5 - 68	
						QC 5 - 9	
						QC 5 - 50	EL
						QC 5 - 30	
						QC 5 - 40	
						QC 5 - 61	
						QC 5 - 81	
220	Spray Paint - 2 - B4B	20 pcs	10/21/19	0.00	0.92	Spray Paint - 1 - B4B	
						Spray Paint - 2 - B4B	RD 19-10-8
						Spray Paint - 3 - B4B	
						Spray Paint - 4 - B4B	
230	QC 14	20 pcs	10/21/19	0.00	0.00	QC 14 - 15	
						QC 14 - 2	
						QC 14 - 34	
						QC 14 - 41	
						QC 14 - 51	

						QC 14 - 58	
						QC 14 - 59	
						QC 14 - 9	
						QC 14 - 68	
						QC 14 - 40	
						QC 14 - 19	DAS
						QC 14 - 43	81
						QC 14 - 24	9-89
						QC 14 - 61	
						QC 14 - 81	
							OCT 08 2019
						Packaging 3 - 1 - B4B	
						Packaging 3 - 2 - B4B	
						Packaging 3 - 3 - B4B	
240	Packaging 3-1 - Stock - B4B	20 pcs	10/21/19	0.00	0.00	Packaging 3 - 4 - B4B	
						Packaging 3 - 5 - B4B	
						Packaging 3 - 6 - B4B	
						Packaging 3 - 7 - B4B	
						Packaging 3 - 8 - B4B	
						Packaging 3 - 9 - B4B	
						Packaging 3 - 10 - B4B	
						Packaging 3 - 11 - B4B	
						Packaging 3 - 12 - B4B	
						Packaging 3 - 13 - B4B	
						Packaging 3 - 14 - B4B	
						Packaging 3 - 15 - B4B	
						Packaging 3 - 16 - B4B	
						Packaging 3 - 17 - B4B	
						Packaging 3 - 18 - B4B	
						Packaging 3 - 19 - B4B	
						Packaging 3 - 20 - B4B	
						Packaging 3 - 21 - B4B	
						Packaging 3 - 22 - B4B	
						Packaging 3 - 23 - B4B	PC
						Packaging 3 - 24 - B4B	CCK108A
						Packaging 3 - 25 - B4B	
						Packaging 3 - 26 - B4B	
						Packaging 3 - 27 - B4B	
						Packaging 3 - 28 - B4B	
						Packaging 3 - 29 - B4B	
						Packaging 3 - 30 - B4B	
						Packaging 3 - 31 - B4B	
						Packaging 3 - 32 - B4B	
						Packaging 3 - 33 - B4B	
						Packaging 3 - 34 - B4B	
						Packaging 3 - 35 - B4B	
						Packaging 3 - 36 - B4B	
250	QC 21 - SA	20 pcs	10/21/19	0.00	0.00	QC 21 - SA - 21	DAS
						QC 21 - SA - 70	21
						QC 21 - SA - 53	9-89

Part Op 110 - 1-Cut 646.3500 plate 2.75"x 1.50" as per Dwg
 Descriptions: 120 - QC2- Inspect parts off machine FAI/FAIB
 130 - QC8- Inspect parts - second check
 140 - Small Fab - 1- Fabricate tube as per dwg USE DT10290 PUNCH
 150 - QC5- Inspect part completeness to step on W/O
 160 - Weld per dwg A/R S.S. rod Batch: M126585 - Weld tube to plate as per dwg. DT9867

- 170 - QC9- Inspect visual per QSI004- Fusion Welds
 180 - QC5- Inspect part completeness to step on W/O
 220 - Spray Paint / NDT Room - Prime as per dwg (see note 3) **5195271**
 230 - QC14- Inspect Spray Paint
 240 - Identify as per dwg & Stock Location: _____ - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING THE P# AND REV***
 250 - QC21- Final Inspection - Work Order Release

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M304S16GA	304/316 Sheet .063	.5560 sf (.0278 ea)	110-Waterjet - Flow - 1	5207058
M304TR0.500W.049	304 Round Tube .500 X .049W	16.6600 ft (.833 ea)	140-Small Fab - 2 - B4B	5133773/5126572

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
110-Waterjet - Flow - 1	M304S16GA	1	461	0
140-Small Fab - 2 - B4B	M304TR0.500W.049	17	84	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Strut	2.750Inches ± 0.030	2.780 2.720		
2	Strut	1.500Inches ± 0.030	1.530 1.470		
3	Strut	0.063Inches ± 0.010	0.073 0.053		

Plex 9/20/19 10:03 AM Dart.Renwick.Jennifer

APICAL INDUSTRIES, INC.		ENGINEERING CHANGE NOTICE NO. 04274		SHEET 1 OF 1	
		DWG NO. 646.3500	REV: NC	PREPARED BY J. SOTO	DATE: 12/02/2013
DWG TITLE: STRUT					
APPROVED BY:	ENGR: <i>[Signature]</i>	MFG: <i>[Signature]</i>	QC: <i>[Signature]</i>	EFF. NEXT ORDER	
REASON: REVISED DELTA NOTE 1 & 2.					
TRANSACTION CODES (IC): A-ADD R-REVISE C-CREATE D-DELETE					

SHEET 1, ZONE A1 IS:

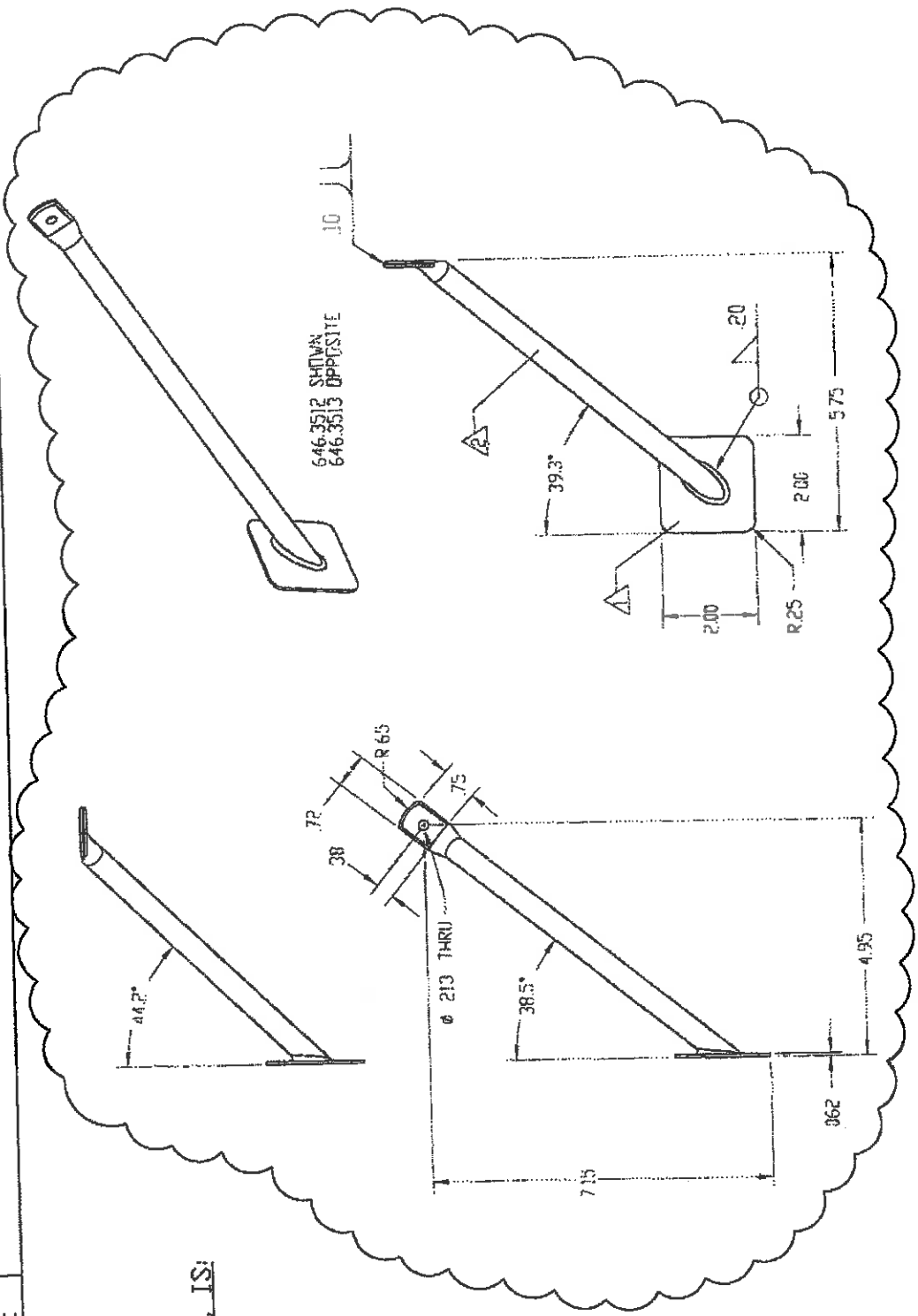
- IS
- NOTES:
- 1 MATERIAL: AISI 304/ 316 SS SHEET .062 THK
(REF DART SPEC. M304S16GA)
 - 2 MATERIAL: AISI 304/316 SS 0.500 OD X 0.049 WALL
(REF DART SPEC. M304TR0.500W0.049)
ENSURE SEAMLESS TUBE IS USED
 - 3 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2
COLOR BLACK;
CARDINAL 4860-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-23377 J TYPE I CLASS N
4. DEBURR AND BREAK ALL SHARP EDGES
 5. WELDS IAW MIL-STD-2219.
TIG WELD WITH FILLER ROD

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 260989

DOCUMENTS EFFECTED:	☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM	CHANGE CATEGORY	☐ MAJOR ☒ MINOR	DER REVIEW REQUIRED	☐ YES ☒ NO
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APICAL INDUSTRIES, INC.		ENGINEERING CHANGE NOTICE NO. 02197		SHEET 1 OF 1	
		DWG NO. 646.3500 REV: N/C		DATE: 01/05/09	
DWG TITLE: STRUT		PREPARED BY: S. HUFF		EFFECT ON DWG: ☐ INC. ☒ UNINC.	
APPROVED BY: <i>[Signature]</i>		ENGR: <i>[Signature]</i>		NEXT ORDER	
REASON: REVISED ANGLE OF 646.3512 & 646.3513 FOR BETTER FITMENT					
TRANSACTION CODES (C): A-ADD R-REVISE D-DELETE					

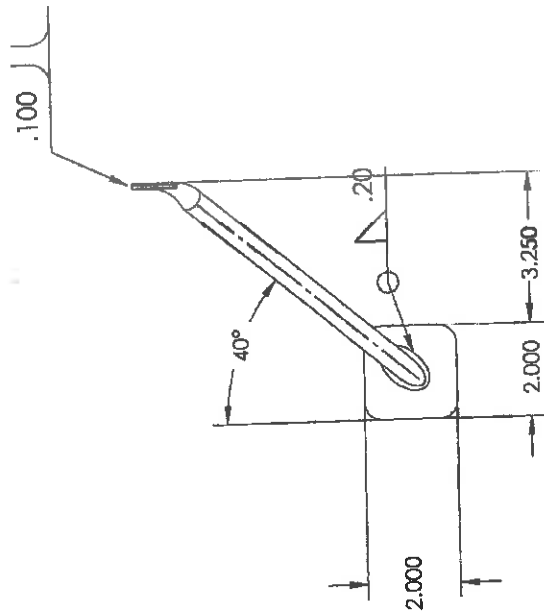
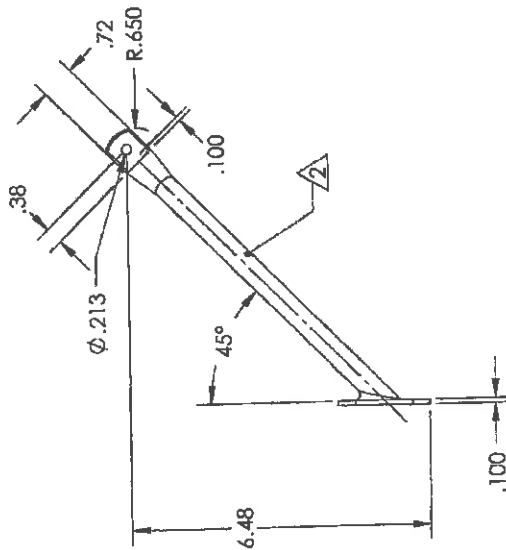
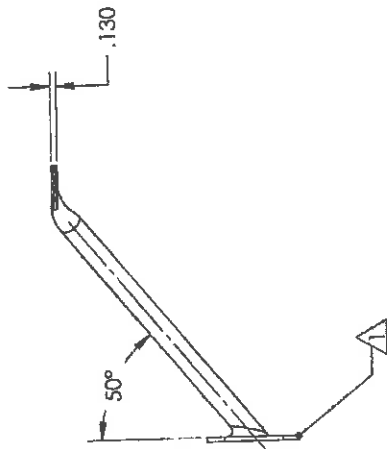
SHEET 2 OF 2



DOCUMENTS EFFECTED:	☐ MDL	☐ INSTALL	☐ INSTRUC	☐ ICA	☐ FMS	☐ BOM	CHANGE CATEGORY	DER REVIEW REQUIRED
							☐ MAJOR ☒ MINOR	☐ YES ☒ NO

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2



646.3512 SHOWN
646.3513 OPPOSITE

APICAL INDUSTRIES		STRUT	
2608 TEMPLE HEIGHTS DR.		DWG NO. 646.3500	
OCEANSIDE, CA. 92056-3512 (760) 724-5300		NIC	
PROJECT NO. 10-300		SCALE NONE	
REVISION 1		SHEET 2 OF 2	
APICAL INDUSTRIES, INC.			
1711000 TYPICAL			
CONTRACT NO.			
DATE OF ISSUE 07/04/00			
DRAWN BY J. H. H.			
CHECKED BY J. H. H.			
7/24/00 (DATE 1/01)			
INCHES 1/8"			



Entered: _____ Date: _____ **WORK ORDER NON-CONFORMANCE / ROUTE UPDATE**

Route update only

NCR No. _____

DEPARTMENT/PROCESS

DISPOSITION

Job: _____

Part No. _____

Rework ☐
Scrap ☐
Use-as-is ☐

Skid-tube ☐
Machining ☐
Large Fab ☐

Cross tube ☐
Small Fab ☐
Finishing ☐

Eng. (Non-AW) ☐
Prod. Eng. Coord. ☐
Rec/Store/Packaging ☐

Engineering ☐
Water Jet ☐
Supplier ☐
Quality ☐

MRB (QS1042)

QTY Affected: _____

Sequence #: _____

Date: _____

Disposition

Description Work Order Deviation

Completed By

Lead hand / Supervisor

QC / QA Coordinator

FAULT CATEGORY

Pressure/Forced	Contamination	Power Loss/Surge	Positioned Wrong
Bending	Misaligned/off center	Folio/Program	Outside Tolerance
Crushing	BOM/Route	Grain Direction	Drawing
Cracks	Broken/Damage/Defect	Weld	Finish
Crimp/Kink/Ripple/Wave/Twist	Incomplete/Unclear Instructions	Wrong Stock Pulled	Part Lost/Missing
Marks/Chatter	Drill Holes	Out of Sequence	Misread
Mislabeled	Fit/Function	Off-set/Set-up	

Root Cause

Operator ☐
Manufacturing Process ☐
Equip/Tooling ☐
Handling/Preservation ☐
Material ☐
Product Improvement ☐
Process Improvement ☐
Human Factors ☐

Other/Details: